WHAT IS CLAIMED IS:

1. A system for designing a communication link for use in a data processing system, comprising:

a parameter generator configured to permit a user to specify a first set of parameters associated with the communication link and further configured to derive a set of internal parameters from the first set of parameters;

an internal link model comprising a set of configurable link cells, wherein the internal link model is configured to receive the derived set of internal parameters and to instantiate each link cell in the set of link cells based on the internal parameters; and

means for modeling a bit error rate (BER) of the instantiated communication link.

2. The system of claim 1, further comprising an estimator configured to estimate the area and power consumption based on the user specified set of first parameters.

3. The system of claim 1, wherein the means for modeling the BER includes a channel simulator configured to receive the instantiated communication link from the parameter generator and a media transfer function specified by the user, wherein the media transfer function is indicative of a channel to which the instantiated link model is connected.

4. The system of claim 1, wherein the parameter generator prevents the user from directly accessing the internal parameters and the generic link model.

5. The system of claim 1, wherein the first set of parameters includes link design parameters selected from a set of parameters comprising a sampling complexity parameter, a loop bandwidth parameter, and a loop order parameter.

6. The system of claim 1, wherein the cells in the generic link model include a sampling latch cell having a configurable sample rate and a sample memory having a configurable memory size.

7. The system of claim 6, wherein the cells in the generic link model further include an edge detector, a phase controller, and a phase rotator, each having at least one configurable parameter.

8. The system of claim 1, wherein the power supply voltage is a configurable parameter of the generic link model.

9. The system of claim 1, wherein the system is further configured to permit the user to specify a first operational parameter and an acceptable limit for a second operational parameter, and still to configure to instantiate each link cell to obtain an optimal value for the second parameter link constrained by the first operational parameter.

10. A computer program product comprising a computer executable code, stored in a computer readable medium, for designing a communication link for use in a data processing system, comprising:

parameter generator computer code means for permitting a user to specify a first set of parameters associated with the communication link and further for deriving a set of internal parameters from the first set of parameters;

computer code means for modeling an internal link comprising a set of configurable link cells, wherein the internal link model code means are configured to receive the derived set of internal parameters and to instantiate each link cell in the set of link cells based on the internal parameters; and

computer code means for modeling a bit error rate (BER) of the instantiated communication link.

11. The computer program product of claim 10, further comprising code means for estimating the area and power consumption based on the user specified set of first parameters.

12. The computer program product of claim 10, wherein the code means for modeling the BER includes a code means for receiving the instantiated communication link from the parameter generator and a media transfer function specified by the user, wherein the media transfer function is indicative of a channel to which the instantiated link model is connected.

13. The computer program product of claim 10, wherein the parameter generator code means prevents the user from directly accessing the internal parameters and the generic link model.

14. The computer program product of claim 10, wherein the first set of parameters includes link design parameters selected from a set of parameters comprising a sampling complexity parameter, a loop bandwidth parameter, and a loop order parameter.

15. The computer program product of claim 10, wherein the cells in the link model include a sampling latch cell having a configurable sample rate and a sample memory having a configurable memory size.

16. The computer program product of claim 15, wherein the cells in the generic link model further include an edge detector, a phase controller, and a phase generator, each having at least one configurable parameter.

17. The computer program product of claim 10, wherein a power supply voltage is a configurable parameter of the generic link model.

18. The computer program product of claim 10, further comprising code means for permitting the user to specify a first operational parameter of the link and code means for determining values of the internal parameters to optimize a second operational parameter of the link constrained by the first parameter.

19. A service permitting a user to define a communication link suitable for use in a data processing system, comprising:

defining an internal model of a generic communication link, the internal model comprising a set of configurable communication link cells;

enabling the user to specify a first set of parameters associated with the communication link while preventing the user from accessing the internal model;

providing means for converting the first set of parameters to an internal set of parameters; and

providing means for using the internal parameters to configure an internal model of the communication link.

20. The service of claim 19, wherein enabling the user to specify a first set of parameters includes enabling the user to specify a first operational parameter and a second parameter and further wherein providing means for using the internal parameters to configure an internal model includes providing means for configuring the internal model to obtain an optimal value for the second parameter link constrained by the first operational parameter.

21. The service of claim 19, further comprising providing means for simulating a bit error rate of communication link.

22. The service of claim 21, further comprising providing means for estimating die size and power consumption of the communication link.